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In the Specification:

Please amend the paragraph beginning at page 4, line 7 as follows:

According to a related embodiment, the disclosure provides a method of modulation detection. The method can include receiving a signal, generating a first decision statistic based on the received signal, phase rotating the received signal, generating a second decision statistic based on the phase rotated received signal, and determining a selected modulation type based on comparing the first decision statistic with the second decision statistic. The method can also include generating an observation matrix from the received signal, wherein the first decision statistic is generated based on the observation matrix. The method can additionally include generating an observation matrix from the phase-rotated received signal, wherein the second decision statistic is generated based on the observation matrix. The step of determining a selected modulation type can include comparing the first decision statistic with the second decision statistic, determining a desired modulation to be a first modulation type if the first decision statistic is less than or equal to the second decision statistic, and determining a desired modulation to be a second modulation type if the second decision statistic is less than the first decision statistic. The step of determining a selected modulation type can determine the selected modulation type to be a Gaussian minimum shift keying modulation type, an octal phase shift keying modulation type, or any other useful modulation type, based on comparing the first decision statistic with the second decision statistic. Generating a first decision statistic can include generating the first decision statistic based on four bursts comprising a radio link control bock of the received signal. The first decision statistic can be generated according to $\cancel{\varepsilon_0 = \mathbf{b}^T(I - \mathbf{Z}_0(\mathbf{Z}_0^T\mathbf{Z}_0)^{-1}\mathbf{Z}_0)\mathbf{b}}$ $\underline{\varepsilon_0 = \mathbf{b}^T(I - \mathbf{Z}_0(\mathbf{Z}_0^T\mathbf{Z}_0)^{-1}\mathbf{Z}_0^T)\mathbf{b}}$. The second decision statistic can be generated according to $\cancel{\varepsilon_1 = \mathbf{b}^T(I - \mathbf{Z}_1(\mathbf{Z}_1^T\mathbf{Z}_1)^{-1}\mathbf{Z}_1)\mathbf{b}}$ $\underline{\varepsilon_1 = \mathbf{b}^T(I - \mathbf{Z}_1(\mathbf{Z}_1^T\mathbf{Z}_1)^{-1}\mathbf{Z}_1^T)\mathbf{b}}$.

Please amend the paragraph beginning at page 4, line 30 as follows:

According to a related embodiment, the disclosure provides a method of modulation detection. The method can include receiving a signal, constructing a first decision statistic based on a first hypothesized modulation type including interference suppression based on the received signal, constructing a second decision statistic based on a second hypothesized modulation type including interference suppression based on the received signal, and identifying a selected modulation type based on a comparison of the first decision statistic and the second decision statistic. The first hypothesized modulation type can be a Gaussian minimum shift keying modulation type. The second hypothesized modulation type can be an octal phase shift keying modulation type. The method can also include transforming the received signal where the second decision statistic can be based on transformed received signal. Transforming the received signal can include phase rotating the received signal or any other useful transformation. The first decision statistic can be generated according to $\cancel{\varepsilon_0 = \mathbf{b}^T(I - \mathbf{Z}_0(\mathbf{Z}_0^T\mathbf{Z}_0)^{-1}\mathbf{Z}_0)\mathbf{b}}$ $\underline{\varepsilon_0 = \mathbf{b}^T(I - \mathbf{Z}_0(\mathbf{Z}_0^T\mathbf{Z}_0)^{-1}\mathbf{Z}_0^T)\mathbf{b}}$. The second decision statistic can be generated according to $\cancel{\varepsilon_1 = \mathbf{b}^T(I - \mathbf{Z}_1(\mathbf{Z}_1^T\mathbf{Z}_1)^{-1}\mathbf{Z}_1)\mathbf{b}}$ $\underline{\varepsilon_1 = \mathbf{b}^T(I - \mathbf{Z}_1(\mathbf{Z}_1^T\mathbf{Z}_1)^{-1}\mathbf{Z}_1^T)\mathbf{b}}$. Identifying a selected modulation type can include comparing the first decision statistic with the second decision statistic, determining a desired modulation to be a first modulation type if the first decision statistic is less than or equal to the second decision statistic, and determining a desired modulation to be a second modulation type if the first decision statistic is greater than the second decision statistic. The first modulation type can be a Gaussian minimum shift keying modulation type, an octal phase shift keying modulation type, or any other useful modulation type. Constructing a first decision statistic can include constructing the first decision statistic based on four bursts comprising a radio link control bock of the received signal.

Please amend the paragraph beginning at page 9, line 12 as follows:

Notably, the error metric ε over the midamble (defined in equation (1.2), or equivalently in equation(1.6)) can then be computed in terms of the observation matrix $\mathbf{Z}$ and the training sequence vector $\mathbf{b}$ according to:

$$\cancel{\varepsilon = \mathbf{b}^T(I - \mathbf{Z}(\mathbf{Z}^T\mathbf{Z})^{-1}\mathbf{Z})\mathbf{b}}\ \underline{\varepsilon = \mathbf{b}^T(I - \mathbf{Z}(\mathbf{Z}^T\mathbf{Z})^{-1}\mathbf{Z}^T)\mathbf{b}} \tag{0.1}$$

Please amend the paragraph beginning at page 12, line 15 as follows:

In step 515, an error metric, such as a decision statistic, ε_0 is generated under hypothesis H_0 (GMSK modulation), where ε_0 is defined according to equation (0.1):

$$\cancel{\varepsilon_0 = \mathbf{b}^T(I - \mathbf{Z}_0(\mathbf{Z}_0^T\mathbf{Z}_0)^{-1}\mathbf{Z}_0)\mathbf{b}}\ \underline{\varepsilon_0 = \mathbf{b}^T(I - \mathbf{Z}_0(\mathbf{Z}_0^T\mathbf{Z}_0)^{-1}\mathbf{Z}_0^T)\mathbf{b}} \tag{0.2}$$

Please amend the paragraph beginning at page 13, line 4 as follows:

In step 530, the error metric ε_1 is computed under hypothesis H_1 (8-PSK modulation) according to:

$$\cancel{\varepsilon_1 = \mathbf{b}^T(I - \mathbf{Z}_1(\mathbf{Z}_1^T\mathbf{Z}_1)^{-1}\mathbf{Z}_1)\mathbf{b}}\ \underline{\varepsilon_1 = \mathbf{b}^T(I - \mathbf{Z}_1(\mathbf{Z}_1^T\mathbf{Z}_1)^{-1}\mathbf{Z}_1^T)\mathbf{b}} \tag{0.3}$$